

**WORKMAN
NYDEGGER
& SEELEY**

ATTORNEYS AT LAW

A PROFESSIONAL CORPORATION

1000 EAGLE GATE TOWER

60 EAST SOUTH TEMPLE

SALT LAKE CITY, UTAH 84111

TELEPHONE (801) 533-9800

FACSIMILE (801) 328-1707

RICK D. NYDEGGER
DAVID O. SEELEY
BRENT P. LORIMER
THOMAS R. VUKSINICK
LARRY R. LAYCOCK
JONATHAN W. RICHARDS
DAVID R. WRIGHT
JOHN C. STRINGHAM
BRADLEY K. DESANDRO
JOHN M. GUYNN
CHARLES L. ROBERTS
GREGORY M. TAYLOR
DANA L. TANGREN
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ERIC L. MASCHOFF
C. J. VEVERKA
ROBYN L. PHILLIPS
RICHARD C. GILMORE†
DAVID B. DELLENBACH

KEVIN K. JOHANSON
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R. BURNS ISRAELSEN
DAVID R. TODD
FRASER D. ROY
CARL T. REED
JESÚS JUANÓS I TIMONEDA, Ph.D.
STEPHEN D. PRODNUK, Ph.D.
R. PARRISH FREEMAN, Jr.
PETER F. MALEN, Jr.
ADRIAN J. LEE
KYLE H. FLINDT
DAVID B. TINGEY
L. REX SEARS

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H. ROSS WORKMAN
OF COUNSEL

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MAILING ADDRESS:
P.O. BOX 45862
SALT LAKE CITY, UT 84145

INTERNET

HOME PAGE: <http://www.wnspat.com>
GENERAL E-MAIL: info@wnspat.com

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box: PATENT APPLICATION
Assistant Commissioner for Patents
Washington, DC 20231

TRANSMITTAL FOR PATENT APPLICATION

Sir:

Transmitted herewith for filing under 37 C.F.R. § 1.53(b) is a United States patent application entitled UPDATING PRESENCE INFORMATION in the name of the following inventors: Leon Won and Peter Beebee.

Enclosed are the following:

- X A specification, claims, abstract, and cover page in total comprising thirty-one (31) pages.
- X Three (3) sheets of drawings.
- X A joint signature Declaration, Power of Attorney and Petition.
- X An Assignment conveying the invention to Microsoft Corporation, including a Form PTO 1595 recordation cover sheet.
- A Declaration Claiming Small Entity Status pursuant to 37 C.F.R. § 1.9 and § 1.27.
- X A Certificate of Mailing by "Express Mail" certifying a filing date by use of Express Mail Label No. EL565973636US.

X Priority to Provisional Application Serial No. 60/185,831 filed on February 29, 2000 is claimed under 35 U.S.C. § 119.

 A certified copy of foreign priority application Serial No. .

 An Associate Power of Attorney.

The filing fee has been calculated as shown below.

			SMALL ENTITY		LARGE ENTITY	
FOR	NO. FILED	NO. EXTRA	RATE	FEE	RATE	FEE
BASIC FEE				\$345		\$690
TOT. CLAIMS	28 - 20=	8	X 9=		X 18=	144
IND. CLAIMS	4 - 3=	1	X 39		X 78=	78
MULTIPLE DEPENDENT CLAIM			+130=		+260=	
			TOTAL		TOTAL	912

X Form PTO-2038 submitting Credit Card Payment in the amount of \$952.00 is enclosed to cover:

X The \$912.00 government filing fee.

X The \$40.00 recordation fee of the enclosed assignment.

 Please debit Deposit Account No. 23-3178 in the amount of \$ for the government filing fee.

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X The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 23-3178.

X Any additional filing fees required under 37 C.F.R. § 1.16.

X Any patent application processing fees under 37 C.F.R. § 1.17.

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X Any filing fees under 37 C.F.R. § 1.16 for presentation of extra claims.

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— The issue fee set forth in 37 C.F.R. § 1.18 at or before mailing of the Notice of Allowance, pursuant to 37 C.F.R. § 1.311(b).

X A duplicate copy of this letter is enclosed.

Please address all future correspondence in connection with the above-identified patent application to the attention of the following:

RICK D. NYDEGGER
WORKMAN, NYDEGGER & SEELEY
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, Utah 84111
Telephone: (801) 533-9800

Dated this 31st day of August 2000.

Respectfully submitted,



CARL T. REED
Attorney for Applicant
Registration No. 45,454



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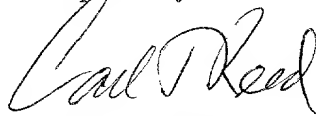
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- Patent Application in the name(s) of Leon Wong and Peter Beebee for UPDATING PRESENCE INFORMATION (31 pages)
- Drawings (3 sheets)
- Assignment with Form PTO-1595 cover sheet (4 pages)
- Declaration, Power of Attorney and Petition (4 pages)
- Transmittal Letter (3 pages)
- Form PTO-2038 submitting Credit Card Payment in the amount of \$952.00
- Certificate of Express Mailing
- Postcard

Dated this 31st day of August 2000.

Respectfully submitted,



CARL T. REED
Attorney for Applicant
Registration No. 45,454

WORKMAN, NYDEGGER & SEELEY
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, Utah 84111
Telephone: (801) 533-9800

CTR:dfw

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UNITED STATES PATENT APPLICATION

of

LEON WONG

and

PETER BEEBEE

for

UPDATING PRESENCE INFORMATION

WORKMAN, NYDEGGER & SEELEY

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

1000 EAGLE GATE TOWER

60 EAST SOUTH TEMPLE

SALT LAKE CITY, UTAH 84111

BACKGROUND OF THE INVENTION

1. Related Applications

This application claims the benefit of U.S. Provisional application No. 60/185,831, filed February 29, 2000, and is incorporated herein by reference.

2. The Field of the Invention

The present invention relates to electronic messages and to electronic communications. More particularly, the present invention relates to methods and systems for updating the presence information of a user engaged in electronic communications.

3. The Prior State of the Art

Instant messaging, a form of electronic communication which permits users to quickly communicate over a network such as the Internet, is fast becoming a popular communication medium. The idea behind instant messaging is the desire of a group of individuals to communicate and send messages in "real time" over the Internet. In fact, the ability to communicate in "real time" is one of the essential differences between instant messaging and other forms of electronic messaging such as e-mail. Instant messaging facilitates real time electronic communications among the subscribers of an electronic messaging group and is essentially an electronic version of person to person communication.

A significant problem associated with instant messaging, however, is related to notification. For example, many individuals desire to be notified when another individual logs on, when another individual is on line, or when the status of another individual changes and what is the result of that status change. Currently, "presence information" is

1 used to describe the status or availability of a client computer, or a user associated with
2 that client computer. When a user changes their status, it is reflected to that user's
3 subscribers. In other words, the subscribers are effectively notified of the change in status
4 of that user through the presence information.

5 The ability of users to electronically communicate using instant messaging is often
6 dependent on the availability of the users and presence information provides the users or
7 members of an electronic messaging group with information that is indicative of the user's
8 availability. For example, if a subscriber desires to conduct instant messaging with another
9 user, the presence information of the user may be used by the subscriber in deciding
10 whether to initiate or continue electronic communication. If the user is logged off, the
11 subscriber may decide to not compose and send an instant message because the user is not
12 online and will likely not receive the message in real time. Alternatively, if the user is
13 logged in or online, the subscriber is relatively assured that an instant message will be
14 received by the user in real time. Whether there is a response to the instant message by the
15 user is dependent on whether the user is present at their computer and whether the user
16 chooses to respond to the instant message. In any event, the presence information assists
17 all of the users of a particular messaging group in making decisions relating to instant
18 messaging.

19 Within a particular messaging group, each user has a particular status or state that is
20 reflected to all of the other users or subscribers. The status of a user is often determined by
21 the client computer or device that is associated with the user. Thus, when a user logs on,
22 an online status is reflected to the subscribers. When the status changes, the status change
23 is reflected to the subscribers instantly. For instance, when a user changes their status to
24

1 “Out to Lunch,” the subscribers are aware of this change and will adjust the way they
2 utilize instant messaging accordingly.

3 Notifying the subscribers of a particular user’s status becomes significantly more
4 difficult when the user is associated or logged onto more than one client or device. Each
5 client can believe that the user has a different status. For example, one client can believe
6 that the user is “Online” while another client believes that the user is “Out to Lunch.”
7 Because the various clients can believe that the user has a different state or status, the
8 clients are effectively battling each other to update the user’s status that is reflected to the
9 subscribers.

10 One solution to this problem is to allow each client to alter the status information
11 when a status change occurs for that client. In other words, the status reflected to other
12 users is the status of the last client that experienced a status change. This solution,
13 however, can lead to an inaccurate status being reflected to the subscribers. For instance,
14 when a user is logged in to more than one client and the status of the first client is changed
15 to “Offline,” then the subscribers perceive that the user is no longer available and not
16 connected with the messaging group even though another client associated with the user
17 has an “Online” status and is actually available to the subscribers. Thus, methods and
18 systems for accurately updating presence information are desired.

SUMMARY OF THE INVENTION

The present invention provides systems and methods for updating presence information. Within an environment supporting instant messaging, presence information is often used by subscribers or watchers of a user to determine the current status of the user. Because the presence information of a particular user is usually controlled by that user, the subscribers can be instantly informed of a user's status via the presence information. The subscribers, as well as the user, can use the presence information, for example, to make decisions relating to instant messaging.

Examples of presence information, which indicate the status of a user, include online, offline, on the phone, and the like. If a user is online, then the user is usually available to actively participate in instant messaging. Similarly, if a user is offline, then the user is most likely unavailable to actively participate in instant messaging. Thus, the decision made by members of an electronic messaging group to electronically communicate using instant messages is frequently influenced by the presence information of the group members.

Properly maintaining presence information becomes more difficult when a user is associated with multiple clients. In order to effectively update presence information in a system where a user is associated with more than one client, a client view status is created and maintained for each separate client. Each client view status reflects the status of the associated client. The association between each client view status and the client is typically accomplished using a view identifier which essentially maps the appropriate view status to the corresponding client.

When the status of one of the clients changes, then the associated client view status is changed to reflect the status change. However, the master view, which is the status of

1 the user reflected to the user's subscribers, is dependent on both the status change and the
2 status of the other clients associated with the user. By evaluating the individual client view
3 statuses and the proposed status change, the correct status of the user may be presented to
4 both the subscribers and the other clients associated with the user via the master view
5 status.

6 For example, if a user has two clients, both of which have a view status of online,
7 and one of the clients sends a status update of offline, the master view status is not changed
8 because the correct status of the user is online. Thus the status change causes the
9 associated client view to show that the client is offline, while the master view reflects to
10 the subscribers that the user is still online.

11 Additional features and advantages of the invention will be set forth in the
12 description which follows, and in part will be obvious from the description, or may be
13 learned by the practice of the invention. The features and advantages of the invention may
14 be realized and obtained by means of the instruments and combinations particularly
15 pointed out in the appended claims. These and other features of the present invention will
16 become more fully apparent from the following description and appended claims, or may
17 be learned by the practice of the invention as set forth hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the manner in which the above-recited and other advantages and features of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered to be limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

Figure 1 illustrates an exemplary system that provides a suitable operating environment for the present invention;

Figure 2 is illustrates an exemplary messaging group having a plurality of connected clients;

Figure 3 illustrates an exemplary messaging group where each user is associated with one or more clients; and

Figure 4 illustrates the status of the separate clients as well as the status reflected to other clients within a messaging group.

DETAILED DESCRIPTION OF THE INVENTION

The ability to properly update and reflect presence information is important to an instant messaging environment because the messages are transmitted substantially instantaneously. Instant messaging permits users to have a real time electronic conversation. If the presence information, however, does not reflect the true status of one of the instant messaging group participants, then the ability of the participants to communicate in real time is effectively reduced.

The present invention provides both systems and methods for updating presence information such that the subscribers of an instant messaging group are aware of the correct status of all the other group members. This is particularly important in situations where a single user is associated with multiple clients within the same instant messaging group. The correct status of the user, in this situation, is reflected to the subscribers by establishing a master view that accounts for the specific statuses of the individual clients associated with a user. Thus, the master view reflects the status of the user to the subscribers while client views are utilized to determine both the status of the separate user clients associated with the user as well as the status that is reflected by the master view.

The present invention extends both methods and systems for updating and reflecting presence information to subscribers within an instant messaging group. The embodiments of the present invention may comprise a special purpose or general purpose computer including various computer hardware, as discussed in greater detail below.

Embodiments within the scope of the present invention also include computer-readable media for carrying or having computer-executable instructions or data structures stored thereon. Such computer-readable media can be any available media which can be accessed by a general purpose or special purpose computer. By way of example, and not

1 limitation, such computer-readable media can comprise RAM, ROM, EEPROM, CD-ROM
2 or other optical disk storage, magnetic disk storage or other magnetic storage devices, or
3 any other medium which can be used to carry or store desired program code means in the
4 form of computer-executable instructions or data structures and which can be accessed by
5 a general purpose or special purpose computer. When information is transferred or
6 provided over a network or another communications connection (either hardwired,
7 wireless, or a combination of hardwired or wireless) to a computer, the computer properly
8 views the connection as a computer-readable medium. Thus, any such a connection is
9 properly termed a computer-readable medium. Combinations of the above should also be
10 included within the scope of computer-readable media. Computer-executable instructions
11 comprise, for example, instructions and data which cause a general purpose computer,
12 special purpose computer, or special purpose processing device to perform a certain
13 function or group of functions.

14 Figure 1 and the following discussion are intended to provide a brief, general
15 description of a suitable computing environment in which the invention may be
16 implemented. Although not required, the invention will be described in the general context
17 of computer-executable instructions, such as program modules, being executed by
18 computers in network environments. Generally, program modules include routines,
19 programs, objects, components, data structures, etc. that perform particular tasks or
20 implement particular abstract data types. Computer-executable instructions, associated
21 data structures, and program modules represent examples of the program code means for
22 executing steps of the methods disclosed herein. The particular sequence of such
23 executable instructions or associated data structures represent examples of corresponding
24 acts for implementing the functions described in such steps.

1 Those skilled in the art will appreciate that the invention may be practiced in
2 network computing environments with many types of computer system configurations,
3 including personal computers, hand-held devices, multi-processor systems,
4 microprocessor-based or programmable consumer electronics, network PCs,
5 minicomputers, mainframe computers, and the like. The invention may also be practiced
6 in distributed computing environments where tasks are performed by local and remote
7 processing devices that are linked (either by hardwired links, wireless links, or by a
8 combination of hardwired or wireless links) through a communications network. In a
9 distributed computing environment, program modules may be located in both local and
10 remote memory storage devices.

11 With reference to Figure 1, an exemplary system for implementing the invention
12 includes a general purpose computing device in the form of a conventional computer 20,
13 including a processing unit 21, a system memory 22, and a system bus 23 that couples
14 various system components including the system memory 22 to the processing unit 21.
15 The system bus 23 may be any of several types of bus structures including a memory bus
16 or memory controller, a peripheral bus, and a local bus using any of a variety of bus
17 architectures. The system memory includes read only memory (ROM) 24 and random
18 access memory (RAM) 25. A basic input/output system (BIOS) 26, containing the basic
19 routines that help transfer information between elements within the computer 20, such as
20 during start-up, may be stored in ROM 24.

21 The computer 20 may also include a magnetic hard disk drive 27 for reading from
22 and writing to a magnetic hard disk 39, a magnetic disk drive 28 for reading from or
23 writing to a removable magnetic disk 29, and an optical disk drive 30 for reading from or
24 writing to removable optical disk 31 such as a CD-ROM or other optical media. The

1 magnetic hard disk drive 27, magnetic disk drive 28, and optical disk drive 30 are
2 connected to the system bus 23 by a hard disk drive interface 32, a magnetic disk drive-
3 interface 33, and an optical drive interface 34, respectively. The drives and their
4 associated computer-readable media provide nonvolatile storage of computer-executable
5 instructions, data structures, program modules and other data for the computer 20.
6 Although the exemplary environment described herein employs a magnetic hard disk 39, a
7 removable magnetic disk 29 and a removable optical disk 31, other types of computer
8 readable media for storing data can be used, including magnetic cassettes, flash memory
9 cards, digital video disks, Bernoulli cartridges, RAMs, ROMs, and the like.

10 Program code means comprising one or more program modules may be stored on
11 the hard disk 39, magnetic disk 29, optical disk 31, ROM 24 or RAM 25, including an
12 operating system 35, one or more application programs 36, other program modules 37, and
13 program data 38. A user may enter commands and information into the computer 20
14 through keyboard 40, pointing device 42, or other input devices (not shown), such as a
15 microphone, joy stick, game pad, satellite dish, scanner, or the like. These and other input
16 devices are often connected to the processing unit 21 through a serial port interface 46
17 coupled to system bus 23. Alternatively, the input devices may be connected by other
18 interfaces, such as a parallel port, a game port or a universal serial bus (USB). A monitor
19 47 or another display device is also connected to system bus 23 via an interface, such as
20 video adapter 48. In addition to the monitor, personal computers typically include other
21 peripheral output devices (not shown), such as speakers and printers.

22 The computer 20 may operate in a networked environment using logical
23 connections to one or more remote computers, such as remote computers 49a and 49b.
24 Remote computers 49a and 49b may each be another personal computer, a server, a router,

1 a network PC, a peer device or other common network node, and typically include many or
2 all of the elements described above relative to the computer 20, although only memory
3 storage devices 50a and 50b and their associated application programs 36a and 36b have
4 been illustrated in Figure 1. The logical connections depicted in Figure 1 include a local
5 area network (LAN) 51 and a wide area network (WAN) 52 that are presented here by way
6 of example and not limitation. Such networking environments are commonplace in office-
7 wide or enterprise-wide computer networks, intranets and the Internet.

8 When used in a LAN networking environment, the computer 20 is connected to the
9 local network 51 through a network interface or adapter 53. When used in a WAN
10 networking environment, the computer 20 may include a modem 54, a wireless link, or
11 other means for establishing communications over the wide area network 52, such as the
12 Internet. The modem 54, which may be internal or external, is connected to the system bus
13 23 via the serial port interface 46. In a networked environment, program modules depicted
14 relative to the computer 20, or portions thereof, may be stored in the remote memory
15 storage device. It will be appreciated that the network connections shown are exemplary
16 and other means of establishing communications over wide area network 52 may be used.

17 As used herein "client" refers to a client computer that is connected to a server
18 computer. Client may also refer, however, to a user or individual that operates the client.
19 Conversely, user does not typically refer to the client computer, but is used to refer to the
20 individual operating the computer. The present invention is described in terms of client
21 and server computers, but it is understood that in some instances, a client computer may
22 also be a server computer and a server computer may also be a client computer. The
23 particular designation of a computer may frequently be derived from the context of the
24 computer network. As used herein, "subscriber" may refer to either a client computer or to

1 a user. Within an instant messaging group, a user or client typically has one or more
2 subscribers. Thus, with respect to a particular user, other clients are subscribers and the
3 particular user is a subscriber of the other clients or users. As used herein a “messaging
4 group” typically refers to a group of users that are able to communicate utilizing instant
5 messaging or other form of electronic communication.

6 While the present invention is described in terms of instant messaging, the methods
7 and systems of the present invention are not limited to instant messaging but may be
8 applied to other forms of electronic communication.

9 Figure 2 illustrates an exemplary system in which the systems and methods of the
10 present invention may be implemented. Figure 2 illustrates clients 202, 204, 206, 208, and
11 210, which are connected to the Internet 200 or other computer network that supports
12 instant messaging, and the clients form a messaging group 212. With regard to client 202,
13 the clients 204, 206, 208 and 210 are subscribers of client 202 and client 202 is a
14 subscriber to clients 204, 206, 208, and 210 in this example.

15 Each client in the messaging group 212 is capable of sending an instant message to
16 one or more of the other clients in the messaging group 212. When the electronic message
17 is sent by one of the clients, the subscribers of that client receive the instant message very
18 quickly. The ability of the clients to communicate as a messaging group 212 also involves
19 the use of a server 213. Although only one server 213 is illustrated, it is understood that
20 multiple servers may be involved in the electronic communication that occurs within the
21 messaging group 212.

22 The status or presence information of a client is useful in identifying the current
23 state of a particular client or user. Because electronic messages can be sent within a
24 messaging group 212 very quickly, it is useful to know the status of each client to which a

1 user is subscribed. Exemplary states or statuses include, but are not limited to, online,
2 offline, away, invisible, busy, back-soon, on-phone, at-lunch, and the like. The status of a
3 particular client can be discovered by other clients or subscribers or the status is simply
4 readily available to other clients within the messaging group.

5 While the status is representative of the state of each respective client and is
6 illustrated as being located at the clients in Figure 2, the status is usually maintained by the
7 server 213 such that the status of one particular client is more accessible to the other clients
8 in the messaging group 212. In other words, the server 213 is usually responsible for
9 maintaining the status of a particular client that is displayed to that client's subscribers.
10 More specifically, the status 203 of client 202 is preferably maintained by the server 213
11 and reflected to the subscribers of client 202 by the server 213.

12 Each client illustrated in Figure 2 is able to change their respective status. Client
13 202 may decide to go to lunch and would change the status 203 to at-lunch. In accordance
14 with this status change, the server 213 would reflect to the subscribers that the client 202 is
15 at-lunch. Providing presence information in this manner enhances the effectiveness of the
16 electronic communication within the messaging group 212. Client 204, for instance, will
17 not generate an electronic message intended for client 202 if the status 203 of client 202 is
18 offline or at-lunch or other similar state because client 204 knows that client 203 will not
19 receive the electronic message immediately.

20 Figure 3 is a more detailed block diagram of a messaging group 318 that is
21 connected over the Internet 200. As illustrated, the messaging group 318 comprises users
22 302, 305, 308, and 311. It is understood that the messaging group 318 may comprise other
23 users which are not illustrated. Figure 3 also depicts each user being associated to one or
24 more clients. User 302 has access to clients 303 and 304, user 305 has access to clients

1 306 and 307, user 308 has access to clients 309 and 310, and user 311 has access to clients
2 312 and 313. The messaging group 318 is connected through servers 319 and 320. The
3 presence information of the users, as previously described, is maintained by the server
4 computers 319 and 320.

5 The messaging group 318 operates in a similar manner to the messaging group 212
6 shown in Figure 2. However, it is more difficult to maintain status or presence information
7 in the messaging group 318 because each user is capable of utilizing multiple clients
8 within the messaging group. Because a single user is associated with multiple statuses and
9 multiple clients, it is possible that the status reflected to a client's subscribers is incorrect
10 as previously described.

11 Figure 4 is a block diagram more fully illustrating the systems and methods that
12 permit a user's status to be correctly reflected to the user's subscribers. Accurately
13 reflecting a user's status to the subscribers enables the messaging group 318 to
14 communicate quickly and efficiently. If an inaccurate status is reflected, then the
15 messaging group 318 will not be able to function as efficiently. Reflecting the current or
16 correct user status is particularly important when a single user is present at more than one
17 client. For example, a user may change the status of one client to "Offline" even though
18 the user has an "Online" status at another client. If the "Offline" status is reflected to the
19 subscribers, then the subscribers are not aware that the accurate status of the user is
20 "Online."

21 In Figure 4, user 302 is shown as being associated with clients 303 and 304. Client
22 303 has a status 312 and client 304 has a status 313. Generally, the status displayed to
23 other clients and users within the messaging group is the status of the last client to
24 experience a status change. As previously indicated, this can also cause an incorrect status

1 to be displayed to other clients and users. In this embodiment, a master view 317 is
2 generated, which corresponds to the status displayed or reflected to a user's subscribers in
3 the messaging group. The status reflected by the master view 317 does necessarily
4 correspond with the status of the last client to experience a status change.

5 Each client in this embodiment has a client view that is associated with each client:
6 view 315 is associated with client 303 and view 316 is associated with client 306. Views
7 315 and 316 reflect the current or default status of clients 303 and 304 respectively. Thus,
8 if client 303 goes offline, then view 315 reflects that client 303 is offline. The master view
9 317, however, may not reflect the status change of client 303. The server 314 will review
10 each of the client views such that the master view 317 accurately reflects the current state
11 of the user 302, as opposed to reflecting the current state of one of the clients associated
12 with the user 302.

13 When a client sends an initial status to a server, the server responds by providing a
14 view identifier for that specific client. When other clients associated with the same user
15 send an initial status to the server, separate and distinct view identifiers are provided to
16 those clients. Thus the view identifiers are used to identify which client view reflects the
17 status of which client. When a client that has already received a view identifier attempts to
18 update their view with a new status, the corresponding view identifier is sent along with
19 the status change in order to ensure that the correct client view status is updated at the
20 server.

21 The following scenario, while demonstrating this process using the clients
22 illustrated in Figure 4, does not include the steps necessary to update the master view:

- 23 1) Client 303 sends an initial status 312 to the server 314 without a view
24 identifier;

2) Server 314 responds to client 303 by providing a view identifier of 1 and the view identifier of 1 is associated with the view 315;

3) Client 303 sends an updated status 312 to the server 314 along with the view identifier of 1 and the server 314 updates the view 315;

4) Client 304 sends an initial status 313 to the server 314 without a view identifier;

5) Server 314 responds to client 304 by providing a view identifier of 2 that is associated with a view 316;

6) Client 1 sends an updated status 312 to the server 314 along with the view identifier of 1 and the server 314 updates the view 315; and

7) Client 2 sends an updated status to the server 314 with the view identifier of 2 and the server 314 updates the view 316.

In this manner, the individual views of the separate clients can be established and maintained by the server 314.

When the server 314 receives a status update from a client 303, the server 314 determines if client 303 is the only active client of the user. If client 303 is the only active client for the user 302, then the master view 317 is altered to match the status of the client 303 and the status 312 of the client 303 is reflected to the other clients or subscribers that have subscribed to the user 302. In other words, the master view 317, as modified by the status change, is reflected or made available to the other clients in the messaging group.

The following example illustrates how the master view 317 will change according to status changes indicated by one or more of the clients associated with the user 302. The following example is a continuation of the previous example and assumes that the clients

303 and 304 already have a view identifier. While not written, this example also assumes that the appropriate view identifier for each status change is also sent to the server 314.

- 1) Client 303 sends a status update of On the Phone to the server 314.
- 2) The view 315 reflects that the status 312 of the client 303 is On the Phone.
- 3) The master view 317 is changed to reflect that the status of the user 302 is On the Phone.
- 4) The server 314 sends the updated master view status of On the Phone to both the client 304 and to the user's subscribers.
- 5) The client 303 sends a status update of Online to the server 314 and the view 315 reflects that the status 312 of the client 303 is Online.
- 6) The master view 317 is changed to reflect that the status of the user 302 is Online.
- 7) The server 314 reflects the updated master view status of Online to both the client 304 and to the user's subscribers.
- 8) The client 304 sends a status update of Out to Lunch and the view 316 is changed to reflect that the status 313 of the client 304 is Out to Lunch.
- 9) The master view 317 is changed to reflect that the status of the user 302 is Out to Lunch.
- 10) The server 314 reflects the updated master view status of Out to Lunch to both the client 303 and to the user's subscribers.
- 11) The client 304 sends a status update of Idle to the server 314 and the view 316 is updated to reflect that the status 313 of the client 304 is Idle.
- 12) The server 314 ignores the Idle update sent by the client 304 in this case and the master view 317 is not changed.

1 13) The client 303 sends a status update of Offline to the server 314 and the
2 view 315 is updated to reflect that the status 312 of the client 303 is Offline.

3 14) The server 314 ignores the update sent by the client 303 in this case.

4 15) The server 314 updates the master view 317 to reflect, to the client 303 and
5 to the user's subscribers, that the status of the user 302 is Idle as determined by the
6 view 316 because client 304 is the only client currently logged in and Idle is
7 therefore the correct status as determined by evaluating views 315 and 316.

8 When a status change is received at the server 314, the views 315 and 316 are often
9 evaluated or compared to determine what the master view 317 should reflect to the
10 subscribers. In one embodiment, there are several status changes that are treated
11 differently than other status changes. Usually, the master view 317 is changed to match
12 the most recent status change except in some circumstances. If the status change received
13 by a client is "Invisible," then the master view 317 is changed to "Offline" regardless of
14 the other client views. If the status change is "Idle," then the status change is simply
15 ignored and the current master view status is maintained unless all of the other client views
16 show a status of either "Idle" or "Offline," in which case the master view 317 is changed to
17 "Idle." If the status change is "Offline," then the status change is simply ignored and the
18 current master view status is maintained unless all of the other client views show a status
19 of "Offline," in which case the master view 317 is changed to "Offline." More generally,
20 the status change received from a client is evaluated by considering both the status change
21 and the statuses indicated by the current client views. The status reflected by the master
22 view 317 is determined by this evaluation.

23 When a status change or update of "Idle" or "Offline," care is taken to ensure that
24 the correct status of the user is reflected to the subscribers. Simply updating the master

1 view to reflect the Idle or Offline status update does not reflect the accurate status of the
2 user because another client may have an "Online" status. In this case, reflecting the "Idle"
3 or "Offline" status to the subscribers will have an effect on the electronic communication
4 that may occur between the user and the subscribers. For this reason, it is important to
5 account for the current status of each client associated with the user before reflecting a
6 status to the user's subscribers.

7 More generally, the status reflected to a user's subscribers can be determined using
8 a priority system. In the examples described herein, the "Offline" status has the lowest
9 priority, the "Idle" status has the next priority, and the remaining statuses have the highest
10 priority. Using a priority scheme enables the master view status to reflect or advertise the
11 client view status with the highest priority. The priority system described herein is not
12 intended to be limiting, but is an example of how a priority system may be implemented
13 with regard to the status of a user that is reflected to the user's subscribers.

14 The present invention may be embodied in other specific forms without departing
15 from its spirit or essential characteristics. The described embodiments are to be considered
16 in all respects only as illustrative and not restrictive. The scope of the invention is,
17 therefore, indicated by the appended claims rather than by the foregoing description. All
18 changes which come within the meaning and range of equivalency of the claims are to be
19 embraced within their scope.

20 What is claimed and desired to be secured by United States Letters Patent is:
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1 1. In an electronic messaging system having one or more clients associated
2 with a user having a master status reflected to one or more subscribers, a method for
3 updating the master status of the user, the method comprising the steps of:

4 assigning a view status to each of the one or more clients;
5 in response to a status update received from one of the one or more clients,
6 evaluating the status update and each view status; and
7 updating the master status of the user in accordance with the evaluation of
8 the status update and each view status.

9
10 2. A method as defined in claim 1, wherein the step of assigning further
11 comprises the steps of:

12 associating a view identifier with each view status;
13 receiving a client status update and the view identifier from one of the one
14 or more clients; and
15 updating the view status associated with the view identifier according to the
16 client status update.

17
18 3. A method as defined in claim 1, wherein the step of assigning further
19 comprises the steps of:

20 receiving a client status update from one of the one or more clients; and
21 updating the view status identified by a view identifier associating the view
22 status with one of the one or more clients in accordance with the client status
23 update.
24

1 4. A method as defined in claim 1, wherein the step of evaluating further
2 comprises the step of determining whether the master status should reflect the status
3 update.

4
5 5. A method as defined in claim 1, wherein the step of updating further
6 comprises the step of reflecting the master status to the one or more subscribers.

7
8 6. A method as defined in claim 1, wherein the step of updating further
9 comprises changing the master status to the status update.

10
11 7. A method as defined in claim 1, wherein the step of updating further
12 comprises the step of refraining from changing the master status to the status update.

13
14 8. A method as defined in claim 1, further comprising at least one of the step
15 of changing the master status according to a priority system.

16
17 9. A method as defined in claim 8, wherein the step of changing the master
18 status according to a priority system further comprises the steps of:

19 changing the master status to offline if the status update is invisible;
20 refraining from changing the master status if the status update is offline;
21 refraining from changing the master status if the status update is idle;
22 changing the master status to offline if the status update is offline and the
23 remaining view statuses are offline; and
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1 changing the master status to idle if the status update is idle and the
2 remaining view statuses consist of idle and offline.
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1 10. In an electronic communication system having a user associated with one or
2 more clients, the user having presence information maintained at a server, a method for
3 updating the presence information of the user reflected to subscribers, the method
4 comprising the steps of:

5 creating, at the server, a view status for each of the one or more clients,
6 wherein each view status associated with each client is identified by a unique view
7 identifier;

8 altering the presence information from an evaluation of each view status
9 such that the presence information is representative of a current status of the user,
10 wherein the presence information is maintained in a master view and is reflected to
11 the subscribers;

12 receiving, at the server, a status update from one of the one or more clients;
13 and

14 updating the presence information in the master view reflected to the
15 subscribers according to an evaluation of the status update and each view status.

16
17 11. A method as defined in claim 10, wherein the step of creating further
18 comprises the step of receiving a first status change at the server, the first status change
19 being representative of an initial status of one of the one or more clients.

20
21 12. A method as defined in claim 10, wherein the step of altering the presence
22 information further comprises the step of comparing each view status to determine a
23 current status of the user, the current status corresponding to the presence information.

24

1 13. A method as defined in claim 10, wherein each status update is reflected in
2 an associated client view status, the associated client view status being identified by a view
3 identifier sent with each status update.

4
5 14. A method as defined in claim 10, wherein the step of updating further
6 comprises the step of changing the presence information according to a priority system.

7
8 15. A method as defined in claim 14, wherein the step of changing the presence
9 information according to a priority system further comprises at least one of the steps of:
10 changing the presence information to offline if the status update is invisible;
11 refraining from changing the presence information if the status update is
12 offline;
13 refraining from changing the presence information if the status update is
14 idle;
15 changing the presence information to offline if the status update is offline
16 and the remaining view statuses are offline;
17 changing the presence information to idle if the status update is idle and the
18 remaining view statuses consist of idle and offline; and
19 changing the presence information to match the status update.

20
21 16. A method as defined in claim 10, wherein the step of updating further
22 comprises the step of reflecting the updated presence information in the master view to the
23 subscribers.

1 17. A method as defined in claim 10, wherein the step of updating further
2 comprises the step of changing the client view status associated with the status change,
3 such that the client view status accurately reflects the status change.
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5 18. A computer-readable medium having computer executable instructions for
6 performing the steps recited in claim 10.
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1 19. In an instant messaging group having a user associated with multiple
2 clients, the user having presence information representative of a master status of the user, a
3 method for reflecting the master status to subscribers, the method comprising the steps of:

4 for each of the multiple clients, creating a client view status at a server
5 when each of the multiple clients sends a first status change to the server;
6 assigning a view identifier to each client view status when the first status
7 change is received at the server, wherein the view identifier associates each of the
8 multiple clients with a particular client view status;
9 setting the master status based on an evaluation of each client view status;
10 for each subsequent status change received from one of the multiple clients,
11 updating the master status in accordance with an evaluation of the subsequent
12 status change and each client view status, wherein the presence information
13 reflected to the subscribers corresponds to the master status.

14
15 20. A method as defined in claim 19, wherein the client view status is
16 representative of a current status of an associated client.

17
18 21. A method as defined in claim 19, wherein the step of setting the master
19 status further comprises the step of reflecting the master status to the subscribers.

20
21 22. A method as defined in claim 19, wherein the step of updating the master
22 status further comprises the step of changing the master status according to a priority
23 system.

1 23. A method as defined in claim 22, wherein the step of changing the master
2 status according to a priority system further comprises at least one of the steps of:
3 changing the master status to offline if the subsequent status update is
4 invisible;
5 refraining from changing the master status if the status update is offline;
6 refraining from changing the master status if the subsequent status update is
7 idle;
8 changing the master status to offline if the subsequent status update is
9 offline and the remaining client view statuses are offline;
10 changing the master status to idle if the subsequent status update is idle and
11 the remaining client view statuses consist of idle and offline; and
12 changing the master status to match the subsequent status update.

13
14 24. A method as defined in claim 19, wherein the master status reflected to the
15 subscribers is representative of a current status of the user.

16
17 25. A method as defined in claim 19, further comprising the step of selecting
18 one of the client view statutes to be represented in the master status.

19
20 26. A computer-readable medium having computer-executable instructions for
21 performing the steps recited in claim 19.

1 27. A computer program product for implementing in an instant messaging
2 system having a user associated with one or more clients, the user having presence
3 information reflected to subscribers, a method for updating the presence information, the
4 computer program product comprising:

5 a computer-readable medium carrying executable instructions for
6 performing the method, wherein the method includes the steps for:

7 creating, at a server, a view status for each of the one or more
8 clients, wherein the view status associated with each client is identified by a
9 unique view identifier;

10 altering the presence information from an evaluation of each view
11 status such that the presence information is representative of a current status
12 of the user;

13 receiving, at the server, a status update from one of the one or more
14 clients;

15 updating the presence information according to the status update;
16 and

17 reflecting the presence information to the subscribers.

18
19 28. A computer program product as defined in claim 27, wherein the step of
20 updating the presence information further comprises the steps of:

21 changing the presence information to offline if the status update is invisible;
22 refraining from changing the presence information if the status update is
23 offline;
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refraining from changing the presence information if the status update is
idle;
changing the presence information to offline if the status update is offline
and the remaining view statuses are offline;
changing the presence information to idle if the status update is idle and the
remaining view statuses consist of idle and offline; and
changing the presence information to match the status update.

ABSTRACT OF THE DISCLOSURE

Systems and methods for updating the presence information of a user associated with one or more clients. The presence information often indicates the status of a user in an instant messaging environment. A client view is associated with each separate client and the master view or status reflected to other subscribers or clients in the instant messaging environment is determined by evaluating each of the separate client views. In this manner the current status of a user may be accurately reflected to a user's subscribers.

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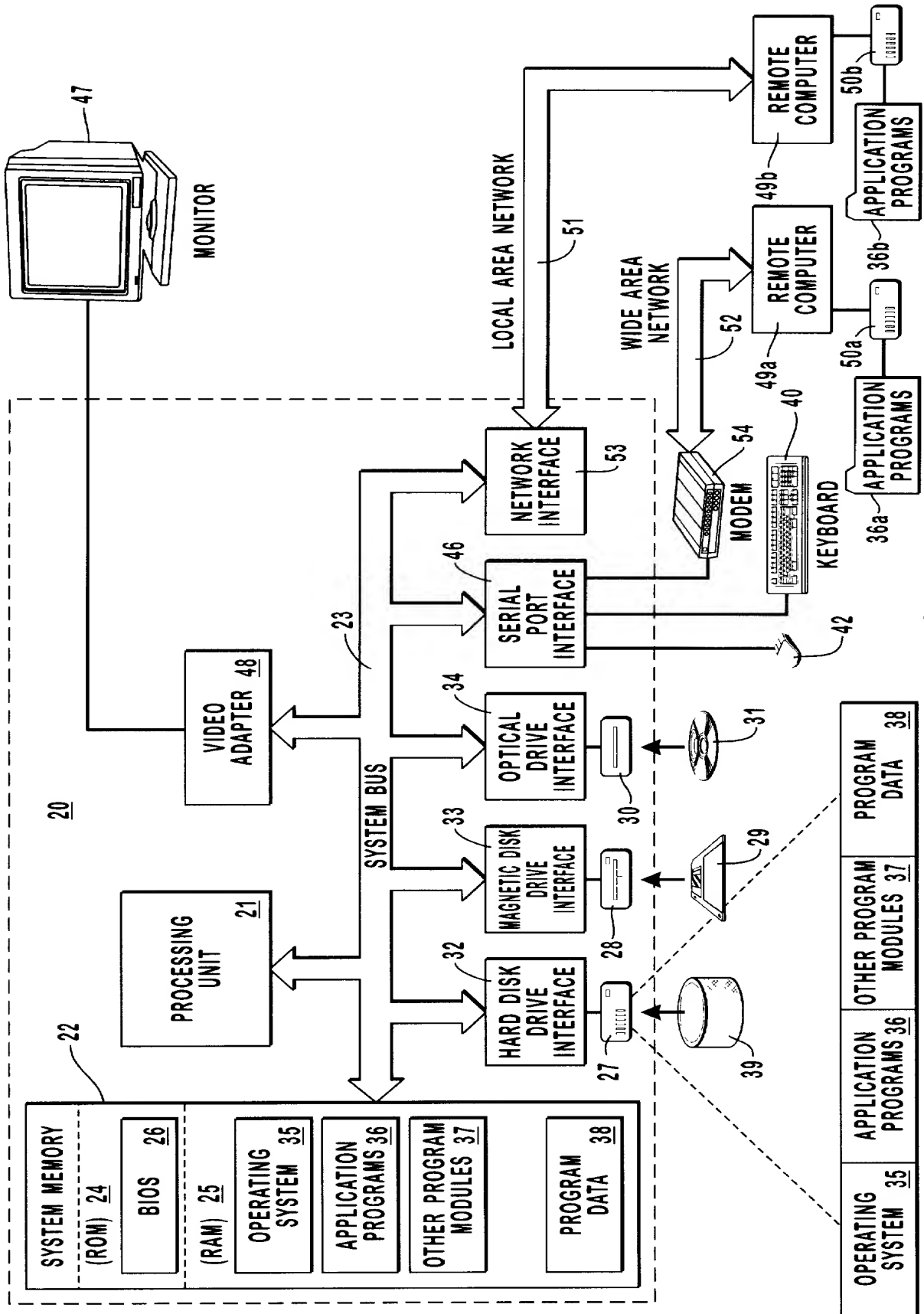


FIG. 1

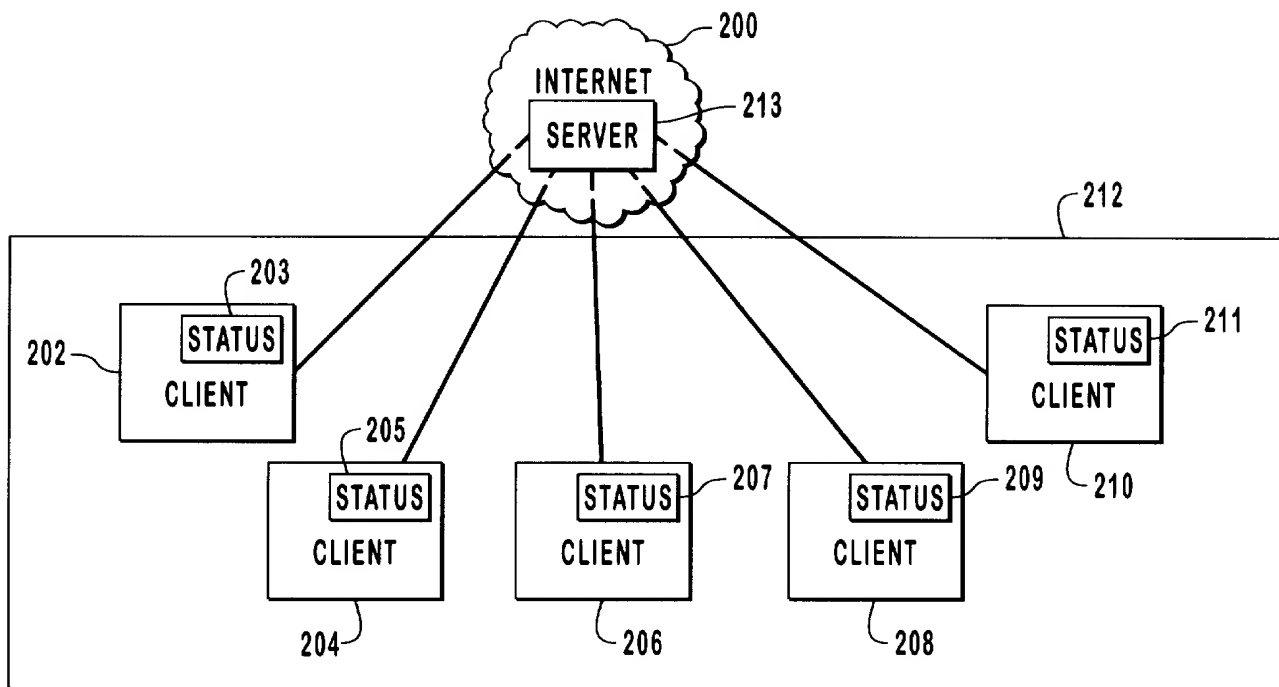


FIG. 2

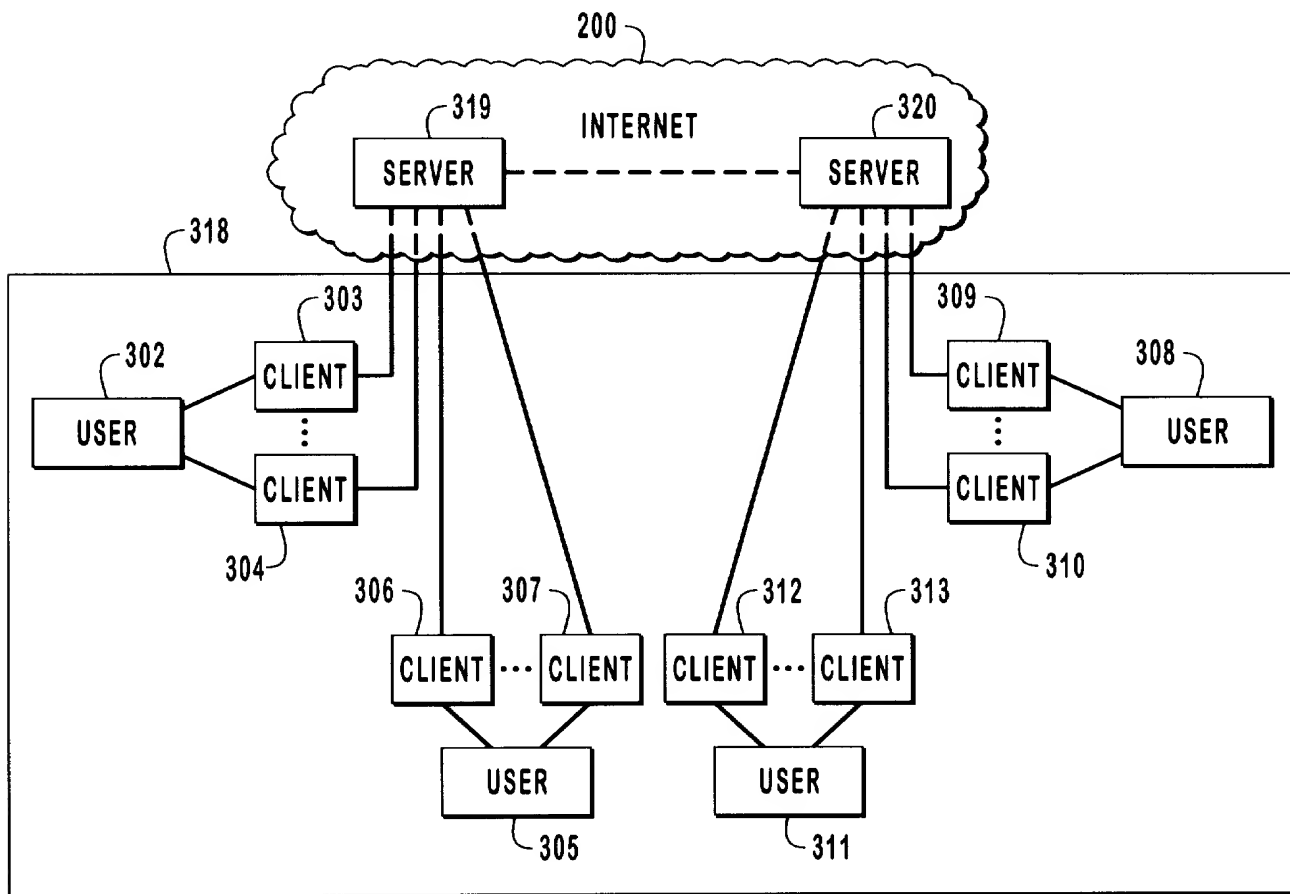


FIG. 3

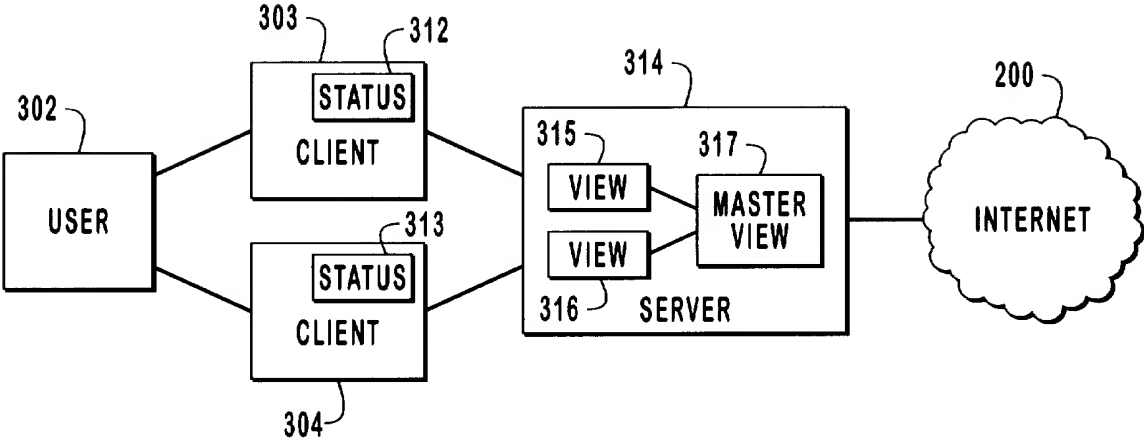


FIG. 4

DECLARATION, POWER OF ATTORNEY, AND PETITION

We, Leon Wong and Peter L. Beebee, declare: that we are citizens of the United States of America, respectively; that our residences and post office addresses are 18010 NE 94th Ct., Apt 3, Redmond, WA 98052 and 11 Longmeadow Way, Acton, MA 01720, respectively; that we verily believe we are the original, first, and joint inventors of the subject matter of the invention or discovery entitled "UPDATING PRESENCE INFORMATION," for which a patent is sought; for which a patent is sought and which is described and claimed in the specification attached hereto; that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to herein; and that we acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Section 1.56(a) of Title 37 of the Code of Federal Regulations.

We declare further that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful, false statements may jeopardize the validity of the application or any patent issuing thereon.

We hereby appoint as our attorneys and/or patent agents: RICK D. NYDEGGER, Registration No. 28,651; DAVID O. SEELEY, Registration No. 30,148; JONATHAN W. RICHARDS, Registration No. 29,843; JOHN C. STRINGHAM, Registration No. 40,831; BRADLEY K. DeSANDRO, Registration No. 34,521; JOHN M. GUYNN, Registration No. 36,153;


CHARLES L. ROBERTS, Registration No. 32,434; GREGORY M. TAYLOR, Registration No. 34,263; DANA L. TANGREN, Registration No. 37,246; KEVIN B. LAURENCE, Registration No. 38,219; ERIC L. MASCHOFF, Registration No. 36,596; C. J. VEVERKA, Registration No. 40,858; ROBYN L. PHILLIPS, Registration No. 39,330; RICHARD C. GILMORE, Registration No. 37,335; DAVID B. DELLENBACH, Registration No. 39,166; KEVIN K. JOHANSON, Registration No. 38,506; L. DAVID GRIFFIN, Registration No. 44,136; R. BURNS ISRAELSEN, Registration No. 42,685; DAVID R. TODD, Registration No. 41,348; FRASER D. ROY, Registration No. 45,666; CARL T. REED, Registration No. 45,454; JESÚS JUANÓS i TIMONEDA, Registration No. 43,332; STEPHEN D. PRODNUK, Registration No. 43,020; R. PARRISH FREEMAN, JR., Registration No. 42,556; PETER F. MALEN, JR., Registration No. 45,576; ADRIAN J. LEE, Registration No. 42,785; KYLE H. FLINDT, Registration No. 42,539; ERIC M. KAMERATH, Registration No. 46,081 and WILLIAM J. ATHAY, Registration No. 44,515, of WORKMAN, NYDEGGER & SEELEY, 1000 Eagle Gate Tower, 60 East South Temple, Salt Lake City, Utah 84111; and DANIEL D. CROUSE, Registration No. 32,022; and KATIE SAKO, Registration No. 32,628, of MICROSOFT CORPORATION, One Microsoft Way, Redmond, Washington 98052, with full power to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith. All correspondence and telephonic communications should be directed to:

Rick D. Nydegger
WORKMAN, NYDEGGER & SEELEY
1000 Eagle Gate Tower
60 East South Temple
Salt Lake City, Utah 84111


Wherefore, we pray that Letters Patent be granted to us for the invention or discovery described and claimed in the foregoing specification and claims, declaration, power of attorney, and this petition.

Signed at Redmond, Washington, this 30th day of August 2000.

Inventor: _____


Leon Wong
18010 NE 94th Ct., Apt. 3
Redmond, WA 98052
Canadian Citizenship

Signed at Acton, Massachusetts, this 28 day of July 2000.

Inventor: 
Peter L. Beebee
11 Longmeadow Way
Acton, MA 01720
US citizen

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